

CLAIMS

1. A multicarrier transmitting apparatus performing a radio communication by use of a plurality of frequencies, the multicarrier transmitting apparatus comprising:

5 a receiving section that receives channel quality information from a receiving apparatus of each user;

 a calculation section that calculates the number of users available for each subcarrier based on channel quality information of each user received by the receiving section;

10 a selection section that selects a subcarrier having the small number of the available users based on a calculation result by the calculation section; and

 an allocation section that allocates the subcarrier, selected by the selection section, to a user showing good channel
15 quality among the users included in the number of the available users, who are the objects to whom the subcarriers are to be allocated.

2. The multicarrier transmitting apparatus according to claim 1,

20 wherein the allocation section sets required quality of each of the users based on the channel quality information, and allocates the subcarrier selected by the selection section to a user whose channel quality satisfies the required quality among the users included in the number of the available users who are
25 the objects to whom the subcarriers are to be allocated.

3. The multicarrier transmitting apparatus according to claim 1,

wherein the allocation section excludes the user to whom the subcarrier was allocated from the objects to whom the subcarriers are to be allocated until the allocations of the subcarriers to other users are finished.

- 5 4. A multicarrier receiving apparatus performing a radio communication with the multicarrier transmitting apparatus defined in claim 1, the multicarrier receiving apparatus comprising:

an estimation section that estimates channel quality
10 information related to channel quality of each subcarrier; and
a transmitting section that transmits the channel quality information estimated by the estimation section.

5. A multicarrier radio communication method in a multicarrier transmitting apparatus performing a radio communication by use
15 of a plurality of frequencies, the multicarrier radio communication method comprising:

a receiving step of receiving channel quality information from a receiving apparatus of each user;

- a calculation step of calculating the number of the users
20 available for each of subcarriers, based on the channel quality information of each of the users received in the receiving step;

a selection step of selecting a subcarrier having the small number of the available users based on a calculation result in the calculation step; and

- 25 an allocation step of allocating the subcarrier selected in the selection step to a user showing the good channel quality among the users included in the number of the available users

who are the objects to whom the subcarriers are to be allocated.

6. A multicarrier radio communication method in a multicarrier receiving apparatus performing a radio communication with a multicarrier transmitting apparatus using the multicarrier radio communication method defined in claim 5, the multicarrier radio communication method comprising:

an estimation step of estimating channel quality information related to channel quality of each subcarrier; and

a transmission step of transmitting the channel quality information estimated in the estimation step.